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A METHOD FOR SELECTING FRAME ENCODING PARAMETERS TO IMPROVE  
TRANSMISSION PERFORMANCE IN A FRAME-BASED COMMUNICATIONS NETWORK

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ABSTRACT OF THE DISCLOSURE

A method for selecting frame encoding parameters to improve  
transmission performance for a transmitting frame being  
transmitted from a transmitting station to a receiving station  
10 over a transmission medium of a frame-based communications  
network, the transmitting frame having a header segment and a  
payload segment, the header segment being transmitted using a  
fixed set of encoding parameters such that the header segment can  
be received and decoded by all stations on the network, the  
15 payload segment being transmitted using a variable set of payload  
encoding parameters, the transmitting station sending the  
transmitting frame using one set of the variable set of payload  
encoding parameters at a time. The receiving station receives and  
decodes the header and payload segments of each transmitting  
20 frame. The decoding includes computing frame statistics. A  
plurality of sets are selected from the variable set of payload  
encoding parameters to form a possible set of payload encoding  
parameters. For each set of payload encoding parameters in the  
possible set of payload encoding parameters, an estimate of  
25 network performance characteristics expected if the transmitting  
station were to transmit the transmitting frame using that set  
of payload encoding parameters is generated based upon the frame  
statistics. A set of payload encoding parameters having optimized  
network performance characteristics is selected based upon  
30 estimates of expected network performance for each set of payload  
encoding parameters in the possible set of payload encoding  
parameters. The frame statistics include a slicer maximum squared  
error for the header segment and a slicer maximum squared error  
for the payload segment.

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